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HIGH VOLTAGE PIN DIODES

DESCRIPTION

The GC4400 series are high voltage, high power (cathode base) PIN diodes. These high resistivity silicon devices are passivated with silicon dioxide for high stability and reliability and have been proven by thousands of device hours in high reliability systems.

Each device can withstand storage temperatures from -65° to +200°C and will operate over the range from -55° to +150°C. All devices meet or exceed military environmental specifications of MIL-S-19500.

The GC4400 series will operate typically with +50 mA forward bias. Breakdown voltages are available up to 1000 volts.

APPLICATIONS

The GC4400 series can be used in RF circuits as an on/off element, as a switch, or as a current controlled resistor in attenuators extending over the frequency range from UHF through Ku band.

Switch applications include high speed switches (ECM systems), TR or lobing switches, channel or antenna selection switches (telecommunications), duplexers (radar) and digital phase shifters (phased arrays).

The GC4400 series can be used in RF circuits as an on/off at moderate RF power levels.

Attenuator type applications include amplitude modulators, AGC attenuators, power levelers and level set attenuators.

ELECTRICAL SPECIFICATIONS: T_A = 25°C

MODEL NUMBER	BREAKDOWN VOLTAGE (I_R = 10µA MAX) V_B (MIN)(Volts)	JUNCTION CAPACITANCE[1] C_J-50 (MAX) (pF)	SERIES RESISTANCE[2] (100mA, 100 MHz) R_{S100} (MAX) (Ohms)	CARRIER LIFETIME (I_R = 6mA, I_F = 10mA) T_L (TYP) (µsec)	THERMAL RESISTANCE (MAX) (°C/W)
GC4410	100	0.10	0.6	.2	40
GC4411	100	0.25	0.5	.5	25
GC4412	100	0.50	0.4	.7	20
GC4413[3]	100	0.75	0.3	1.0	10
GC4430	300	0.10	1.5	.5	40
GC4431	300	0.25	1.2	1.0	30
GC4432	300	0.50	1.0	1.5	20
GC4433[3]	300	0.75	0.8	2.0	10
GC4490	1000	0.10	1.5	1.0	30
GC4491	1000	0.25	1.2	2.0	25
GC4492	1000	0.50	1.0	3.0	20
GC4493[3]	1000	0.75	0.8	5.0	10
GC4494	1000	1.3	.35	6.0	7
GC4495	1000	2.5	.3	7.5	5

Notes:
1. Capacitance is measured at 1 MHz and -50 volts.
2. Resistance is measured using transmission loss techniques.
3. These devices are not available in all case styles. Please consult the factory. specific package styles offered.

The tabulated specifications above are for case style 30. Diodes are also available in various chip configurations.

Each type offers trade offs in series resistance, junction capacitance, carrier lifetime and breakdown voltage; the proper choice of which depends on the end application. Reverse polarity diodes (NIP) and faster speed PIN and NIP diodes are also available. (See data sheets for GC4500, GC4200, and GC4300 series respectively.)

RATINGS

Maximum Leakage Current: 0.5µA at 80% of minimum rated breakdown

Operating Temperature: -55°C to +150°C

Storage Temperature: -65°C to +200°C

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TYPICAL PERFORMANCE CURVES